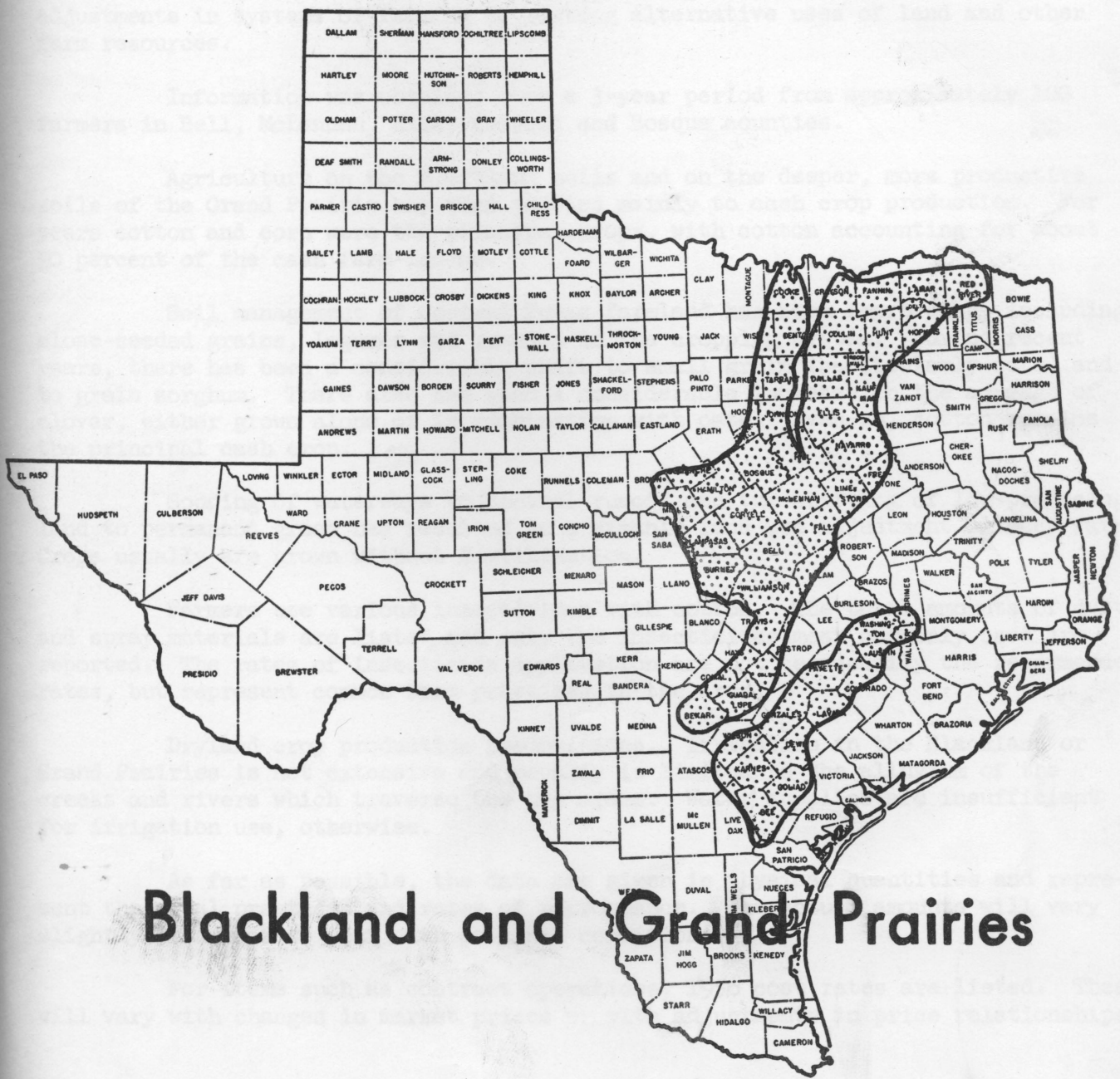
Production and Production Requirements of Crops



Blackland and Grand Prairies

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PRODUCTION AND PRODUCTION REQUIREMENTS OF CROPS--BLACKLAND AND GRAND PRAIRIES

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This is one in a series of reports on production and production requirements of crops in the various types-of-farming areas of Texas. It provides some of the information necessary for analyzing farm management problems and for planning adjustments in systems of farming or testing alternative uses of land and other farm resources.

Information was obtained over a 3-year period from approximately 100 farmers in Bell, McLennan, Hill, Coryell and Bosque counties.

Agriculture on the Blackland soils and on the deeper, more productive soils of the Grand Prairie has been devoted mainly to cash crop production. For years cotton and corn were the principal crops, with cotton accounting for about 90 percent of the cash farm income.

Soil management of Central Texas farmland has been improved by including close-seeded grains, legumes and grasses in the cropping system. During recent years, there has been a considerable shift to small grain (particularly oats) and to grain sorghum. There also has been a considerable increase in the acreage of clover, either grown alone or in combination with oats. Even so, cotton remains the principal cash crop.

Sodding of waterways to control runoff and the shifting of low-producing land to permanent grass has resulted in a sizable land use adjustment on many farms. Crops usually are grown without fertilization.

Farmers use various insecticides with cotton. The total amounts of dust and spray materials are listed and only the insecticides most commonly used are reported. The rates of insecticide application are not necessarily the recommended rates, but represent common farm practices in the area.

Dryland crop production predominates. Irrigation in the Blackland or Grand Prairies is not extensive and usually is limited to the alluvium of the creeks and rivers which traverse the two areas. Water supplies are insufficient for irrigation use, otherwise.

As far as possible, the data are given in physical quantities and represent the usual practices and rates of performance. The actual amounts will vary slightly from year to year with seasonal conditions.

For items such as contract operations, 1956 cost rates are listed. These will vary with changes in market prices or with adjustments in price relationships.

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Family labor is used mainly in growing all crops. Although the farm family may do some cotton hoeing, extra labor usually is hired for this work. Extra labor also is hired for most of the cotton crop that is hand harvested. An increasing amount of cotton is defoliated prior to stripping and harvested mechanically. Farmers with strippers often do custom work for neighbors.

Combining is the most common way of harvesting small grain. Some oats are windrowed prior to combining. All sorghum grain is combined. Many farmers depend on custom combining for harvesting sorghum grain and many farmers who raise corn hire custom picking.

Although both two-row and four-row tractor equipment is common, the trend is toward the use of four-row machinery.

Production and production requirements per acre for general crops (cotton, corn, oats, wheat, barley, sorghum grain, sorghum hay and Sudan pasture) are shown in Tables 1-8. Crops which are not as generally grown, such as sorghum for silage and clover for seed, are shown in Tables 9-10.

Sesame production has been suggested as a new crop for the dark, heavy soils of Central Texas and a limited acreage is now grown. Production methods are similar to those for grain sorghum. An exception is in harvesting where the crop is windrowed prior to combining. For this purpose, a pickup attachment is needed for the combine. Requirements per acre and production for this crop are shown in Table 11.

Bermudagrass and K. R. Bluestem are the most common grasses used in sodding waterways and establishing permanent pastures. The requirements per acre for establishing these two grasses are shown in Tables 12-13. Farmers who have followed the practices as summarized in these two tables usually have been successful in getting stands.

Table 1. Cotton production and production requirements

	Dryland		
Normal yield			
Lint, pounds	175		
Seed, pounds	280		
Seed per acre			
Fuzzy, pounds	24		
Delinted, pounds	12		
Average value of seed (dollars per 100 pounds)			
Fuzzy seed, bought, 25 percent	10.00		
Home grown, 75 percent	5.00		
Delinted seed, bought, 100 percent	20.00		
Insecticides			
Spray, pints	2		
Dust, pounds	10		
Defoliant			
PCP, 4 gallons	8		
Diesel oil, 50 gallons			
	N	P_2O_5	K_2O
Fertilizer	0	0	0
Usual planting period	April		
Usual harvesting period	August - November		

	Labor and power inputs per acre					
	Two-row tractor			Four-row tractor		
		Total hours			Total hours	
	X Over	Man	Tractor	X Over	Man	Tractor
Disk	1.0	.50	.50	1.0	.45	.45
Bed	1.0	.50	.50	1.0	.33	.33
Rebed	1.0	.50	.50	1.0	.33	.33
Cultivate beds	1.0	.50	.50	1.0	.33	.33
Plant	1.2	.66	.66	1.2	.44	.44
Cultivate[1]	4.0	1.95	1.95	4.0	1.02	1.02
Hoeing	2.0	10.00		2.0	10.00	
Poison	2.0	.36	.36	2.0	.36	.36
Total hours preharvest		14.97	4.97		13.26	3.26
Harvest by hand	3.0	15.00		3.0	15.00	
Haul to gin	1.0	.60	.60	1.0	.60	.60
Harvest by stripper:						
Defoliate	1.0	.25	.25	1.0	.25	.25
Strip	1.0	1.66	.83	1.0	1.66	.83
Haul to gin	1.0	.60	.60	1.0	.60	.60
Cut stalks after harvest	1.0	.40	.40	1.0	.40	.40
Common contract operations:						
Defoliate and strip[2]	$1.50 per cwt.			$1.50 per cwt.		
Hand harvest, snap cotton[2]	$2.00 per cwt.			$2.00 per cwt.		
Poison, late season, dust	1.0 at $1.00 per acre			1.0 at $1.00 per acre		

1/ Includes early season insect control.
2/ Includes hauling to gin.

Table 2. Corn production and production requirements

	Dryland
Normal yield, bushels	25
Seed per acre, pounds	7
Average value of seed, cents per pound Bought, 100 percent	16

	N	P_2O_5	K_2O
Fertilizer	0	0	0

Usual planting period	February - March
Usual harvesting period	August - October

	Labor and power inputs per acre					
	Two-row tractor			Four-row tractor		
		Total hours			Total hours	
	X Over	Man	Tractor	X Over	Man	Tractor
Disk	1.0	.50	.50	1.0	.45	.45
Bed	1.0	.50	.50	1.0	.33	.33
Rebed	1.0	.50	.50	1.0	.33	.33
Cultivate beds	1.0	.50	.50	1.0	.33	.33
Plant	1.1	.61	.61	1.1	.31	.31
Cultivate	3.0	1.50	1.50	3.0	.78	.78
Total hours preharvest		4.11	4.11		2.53	2.53
Harvest, one-row picker	1.0	1.00	1.00	1.0	.55	.55
Haul	1.0	1.00	1.00	1.0	.55	.55
Cut stalks after harvest	1.0	.40	.40	1.0	.40	.40
Common contract operations Harvest, picker[1]	1.0 at $3.50 per acre			1.0 at $3.50 per acre		

1/ Does not include hauling.

Table 3. Sorghum grain production and production requirements

	Dryland		
Normal yield, pounds	1,500		
Seed per acre, pounds	8		
Average value of seed (dollars per 100 pounds)			
Bought, 100 percent	7		
	N	P_2O_5	K_2O
Fertilizer	0	0	0
Usual planting period	April - May		
Usual harvesting period	July - August		

	Labor and power inputs per acre					
	Two-row tractor			Four-row tractor		
		Total hours			Total hours	
	X Over	Man	Tractor	X Over	Man	Tractor
Disk	1.0	.50	.50	1.0	.45	.45
Bed	1.0	.50	.50	1.0	.33	.33
Rebed	1.0	.50	.50	1.0	.33	.33
Cultivate beds	1.0	.50	.50	1.0	.33	.33
Plant	1.0	.61	.61	1.1	.31	.31
Cultivate	2.0	1.05	1.05	2.0	.54	.54
Total hours preharvest		3.66	3.66		2.29	2.29
Combine	1.0	.55	.55	1.0	.50	.50
Haul	1.0	.55	.55	1.0	.50	.50
Cut stalks after harvest	1.0	.40	.40	1.0	.40	.40
Common contract operations						
Combine[1]	1.0 at $3.50 per acre			1.0 at $3.50 per acre		

1/ Does not include hauling.

Table 4. Oats-clover production and production requirements

	Grazed and oat crop harvested	Used entirely for grazing
Normal yield, oats, bushels	30	
Grazing, days[1]	21	83
Seed per acre		
Oats, bushels	2	
Clover, pounds	10	
Average value of seed		
Oats, bought, 20 percent (dollars per bushel)	2.25	
Home grown, 80 percent (dollars per bushel)	1.00	
Clover, bought, 100 percent (cents per pound)	6	

	N	P_2O_5	K_2O
Fertilizer	0	45	0

Usual planting period: October - November

Usual harvesting period: May - June

Labor and power inputs per acre

	Two-row tractor			Four-row tractor		
		Total hours			Total hours	
	X Over	Man	Tractor	X Over	Man	Tractor
Flat break	1.0	1.66	1.66	1.0	1.11	1.11
Disk	1.0	.50	.50	1.0	.33	.33
Drill and fertilize	1.0	.50	.50	1.0	.33	.33
Total hours preharvest		2.66	2.66		1.77	1.77
Combine	1.0	.55	.55	1.0	.50	.50
Haul	1.0	.40	.40	1.0	.40	.40
Common contract operation						
Combine[2]	1.0 at $3.50 per acre			1.0 at $3.50 per acre		

1/ Grazing days for 1 cow or the equivalent.
2/ Does not include hauling.

Table 5. Wheat production and production requirements

	Dryland		
Normal yield, bushels	12		
Seed per acre, bushels	1		
Average value of seed (dollars per bushel)			
Bought, 20 percent	2.25		
Home grown, 80 percent	2.00		
	N	P_2O_5	K_2O
Fertilizer	0	0	0
Usual planting period	October - November		
Usual harvesting period	June		

	Labor and power inputs per acre					
	Two-row tractor			Four-row tractor		
		Total hours			Total hours	
	X Over	Man	Tractor	X Over	Man	Tractor
Flat break	1.0	1.66	1.66	1.0	1.11	1.11
Disk	1.0	.50	.50	1.0	.33	.33
Drill	1.0	.42	.42	1.0	.29	.29
Total hours preharvest		2.58	2.58		1.73	1.73
Combine	1.0	.55	.55	1.0	.50	.50
Haul	1.0	.40	.40	1.0	.40	.40
Common contract operation						
Combine[1/]	1.0 at $3.50 per acre			1.0 at $3.50 per acre		

1/ Does not include hauling.

Table 6. Barley production and production requirements

	Dryland		
Normal yield, bushel	18		
Seed per acre, bushels	1.25		
Average value of seed (dollars per bushel) Bought, 100 percent	2.00		
	N	P_2O_5	K_2O
Fertilizer	0	0	0
Usual planting period	October - November		
Usual harvesting period	June		

	Labor and power inputs per acre					
	Two-row tractor			Four-row tractor		
		Total hours			Total hours	
	X Over	Man	Tractor	X Over	Man	Tractor
Flat break	1.0	1.66	1.66	1.0	1.11	1.11
Disk	1.0	.50	.50	1.0	.33	.33
Drill	1.0	.42	.42	1.0	.29	.29
Total hours preharvest		2.58	2.58		1.73	1.73
Combine	1.0	.55	.55	1.0	.50	.50
Haul	1.0	.40	.40	1.0	.40	.40
Common contract operation Combine[1/]	1.0 at $3.50 per acre			1.0 at $3.50 per acre		

1/ Does not include hauling.

Table 7. Sorghum hay production and production requirements

	Dryland		
Normal yield, pounds	4,000		
Seed per acre, pounds	40		
Average value of seed (cents per pound)			
Bought, 100 percent	13		
	N	P_2O_5	K_2O
Fertilizer	0	0	0
Usual planting period	April - May		
Usual harvesting period	July - August		

	Labor and power inputs per acre					
	Two-row tractor			Four-row tractor		
		Total hours			Total hours	
	X Over	Man	Tractor	X Over	Man	Tractor
Flat break	1.0	1.66	1.66	1.0	1.11	1.11
Disk	1.0	.50	.50	1.0	.33	.33
Harrow	.5	.12	.12	.5	.12	.12
Drill	1.0	.42	.42	1.0	.29	.29
Total hours preharvest		2.70	2.70		1.85	1.85
Harvest:						
Mow	1.0	.50	.50	1.0	.50	.50
Haul in	1.0	1.66	.83	1.0	1.66	.83
Common contract operations						
Rake and bale	1.0 at 20 cents per bale			1.0 at 20 cents per bale		

Table 8. Sudan pasture production and production requirements

	Dryland		
Normal yield, grazing days[1/]	90		
Seed per acre, pounds	10		
Average value of seed (cents per pound)			
Bought, 100 percent	10		
	N	P_2O_5	K_2O
Fertilizer	0	0	0
Usual planting period	March - April		
Usual harvesting period	May - October		

	Labor and power inputs per acre					
	Two-row tractor			Four-row tractor		
		Total hours			Total hours	
	X Over	Man	Tractor	X Over	Man	Tractor
Disk	1.0	.50	.50	1.0	.45	.45
Bed	1.0	.50	.50	1.0	.33	.33
Rebed	1.0	.50	.50	1.0	.33	.33
Cultivate beds	1.0	.50	.50	1.0	.33	.33
Plant	1.1	.61	.61	1.1	.31	.31
Cultivate	2.0	1.05	1.05	2.0	.54	.54
Total hours		3.66	3.66		2.29	2.29

1/ Grazing days for 1 cow or the equivalent.

Table 9. Sorghum silage production and production requirements

		Dryland	
Normal yield, tons		8	
Seed per acre, pounds		12	
Average value of seed (cents per pound)			
Bought, 100 percent		13	
	N	P_2O_5	K_2O
Fertilizer	0	0	0
Usual planting period		April - May	
Usual harvesting period		July - August	

	Labor and power inputs per acre					
	Two-row tractor			Four-row tractor		
		Total hours			Total hours	
	X Over	Man	Tractor	X Over	Man	Tractor
Disk	1.0	.50	.50	1.0	.45	.45
Bed	1.0	.50	.50	1.0	.33	.33
Rebed	.30	.15	.15	.30	.10	.10
Cultivate beds	.30	.15	.15	.30	.10	.10
Harrow	.40	.10	.10	.40	.10	.10
Plant	1.10	.61	.61	1.10	.31	.31
Cultivate	2.0	1.00	1.00	2.0	.54	.54
Total hours preharvest		3.01	3.01		1.93	1.93
Harvesting, own equipment						
Cut in field	1.0	1.13	1.13	1.0	1.13	1.13
Haul to silo	1.0	2.60	2.60	1.0	2.60	2.60
Spread and pack	1.0	2.50	1.30	1.0	2.50	1.30
Common contract operations						
Cut in field	1.0 at $6.00 per acre			1.0 at $6.00 per acre		
Haul to silo	1.0 at $2.50 per hour			1.0 at $2.50 per hour		

Table 10. Clover seed production and production requirements

	Hubam			Madrid		
Normal yield, pounds	125			75		
Seed per acre, pounds	15			10		
Average value of seed (cents per pound)						
Bought, 100 percent	6			15		
	N	P_2O_5	K_2O	N	P_2O_5	K_2O
Fertilizer	0	45	0	0	45	0
Usual planting period	October - February			October - November		
Usual harvesting period	June - July			June - July		

	Labor and power inputs per acre					
	Two-row tractor			Four-row tractor		
		Total hours			Total hours	
	X Over	Man	Tractor	X Over	Man	Tractor
Flat break	1.0	1.66	1.66	1.0	1.11	1.11
Disk	1.0	.50	.50	1.0	.33	.33
Drill and fertilize	1.0	.50	.50	1.0	.33	.33
Total hours preharvest		2.66	2.66		1.77	1.77
Cut and windrow	1.0	.40	.40	1.0	.40	.40
Combine	1.0	.55	.55	1.0	.50	.50
Haul	1.0	.20	.20	1.0	.15	.15
Common contract operation						
Combine[1/]	1.0 at $3.50 per acre			1.0 at $3.50 per acre		

1/ Does not include hauling.

Table 11. Sesame production and production requirements

	Dryland
Normal yield, pounds	800
Seed per acre, pounds	1
Average value of seed (cents per pound)	
Bought, 100 percent	10

	N	P_2O_5	K_2O
Fertilizer	0	0	0

Usual planting period	May
Usual harvesting period	October

	Labor and power inputs per acre					
	Two-row tractor			Four-row tractor		
		Total hours			Total hours	
	X Over	Man	Tractor	X Over	Man	Tractor
Disk	1.0	.50	.50	1.0	.45	.45
Bed	1.0	.50	.50	1.0	.33	.33
Rebed	1.0	.50	.50	1.0	.33	.33
Cultivate beds	1.0	.50	.50	1.0	.33	.33
Plant	1.2	.60	.60	1.2	.35	.35
Cultivate	2.0	1.05	1.05	2.0	.54	.54
Hoe	1.0	3.00		1.0	3.00	
Total hours preharvest		6.65	3.65		5.33	2.33
Cut and windrow	1.0	.40	.40	1.0	.40	.40
Combine	1.0	.60	.60	1.0	.60	.60
Haul	1.0	.60	.60	1.0	.60	.60
Contract operations						
Combine[1]	1.0 at $3.50 per acre			1.0 at $3.50 per acre		

1/ Does not include hauling.

Table 12. Common Bermuda--requirements to establish

Sprigs per acre, cubic feet		20	
Average value of sprigs (cents per cubic foot) Bought, 100 percent		15	
Hire for sprigging machine (dollars per day)		6	
	N	P_2O_5	K_2O
Fertilizer	33	30	0
Usual planting period		April	

	Labor and power inputs per acre					
	Two-row tractor			Four-row tractor		
		Total hours			Total hours	
	X Over	Man	Tractor	X Over	Man	Tractor
Flat break	1.0	1.66	1.66	1.0	1.11	1.11
Disk	2.0	1.00	1.00	2.0	.66	.66
Distribute fertilizer	1.0	.50	.50	1.0	.50	.50
Harrow	1.0	.25	.25	1.0	.25	.25
Sprig	1.0	4.50	1.50	1.0	4.50	1.50
Cultivate	1.0	.50	.50	1.0	.25	.25
Total hours to establish		8.41	5.41		7.27	4.27

Table 13. K.R. bluestem--Requirements to establish

Seed per acre, pounds		4	
Average value of seed (dollars per pound)			
Bought, 100 percent		2	
	N	P_2O_5	K_2O
Fertilizer	33	30	0
Usual planting period		April	

	Labor and power inputs per acre					
	Two-row tractor			Four-row tractor		
		Total hours			Total hours	
	X Over	Man	Tractor	X Over	Man	Tractor
Disk	2.0	1.00	1.00	2.0	.66	.66
Plant	1.2	.66	.66	1.2	.44	.44
Cultivate	2.0	1.00	1.00	2.0	.50	.50
Total hours to establish		2.66	2.66		1.60	1.60

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